

## CHAPTER TWO

### TROUBLESHOOTING

Diagnosing mechanical problems is relatively simple if you use orderly procedures and keep a few basic principles in mind. The first step in any troubleshooting procedure is to define the symptoms as closely as possible and then localize the problem. Subsequent steps involve testing and analyzing those areas which could cause the symptoms. A haphazard approach may eventually solve the problem, but it can be very costly in terms of wasted time and unnecessary parts replacement.

Proper lubrication, maintenance and periodic tune-ups as described in Chapter Three will reduce the necessity for troubleshooting. Even with the best of care, however, a vehicle is prone to problems which will require troubleshooting.

Never assume anything. Do not overlook the obvious. If you are riding along and the engine suddenly quits, check the easiest, most accessible problem spots first. Is there gasoline in the tank? Are the fuel shutoff valve and the lever on the fuel filler cap in the ON position? Has the spark plug wire fallen off?

If nothing obvious turns up in a quick check, look a little further. Learning to recognize and describe symptoms will make repairs easier for you or a mechanic at the shop. Describe problems accurately and fully. Saying that "it won't run" isn't the same thing as saying "it quit climbing a hill and won't start," or that "it sat in my garage for 3 months and then wouldn't start."

Gather as many symptoms as possible to aid in diagnosis. Note whether the engine lost power gradually or all at once, what color smoke came from the exhaust and so on. Remember that the more complicated a machine is, the easier it is to troubleshoot because symptoms point to specific problems.

After the symptoms are defined, areas which could cause problems are tested and analyzed. Guessing at the cause of a problem may provide the solution, but it can easily lead to frustration, wasted time and a series of expensive, unnecessary parts replacements.

You do not need fancy equipment or complicated test gear to determine whether repairs can be attempted at home. A few simple checks could save a large repair bill and lost time while the vehicle sits in a dealer's service department. On the other hand, be realistic and do not attempt repairs beyond your abilities. Service departments tend to charge heavily for putting together a disassembled engine that may have been abused. Some won't even take on such a job—so use common sense, don't get in over your head.

## OPERATING REQUIREMENTS

An engine needs 3 basics to run properly: correct fuel/air mixture, compression and a spark at the right time. If one basic requirement is missing, the engine will not run. Four-stroke engine operating principles are described in Chapter Four under *Engine Principles*. The ignition system is the weakest link of the 3 basics. More problems result from ignition breakdowns than from any other source. Keep that in mind before you begin tampering with carburetor adjustments and the like.

If a vehicle has been sitting for any length of time and refuses to start, check and clean the spark plug. Check the condition of the battery to make sure it has an adequate charge. If these are okay, then look to the gasoline delivery system. This includes the tank, fuel shutoff valve, fuel pump and fuel lines to

the carburetors. If your vehicle has a steel tank, rust may have formed in the tank, obstructing fuel flow. Gasoline deposits may have gummed up carburetor jets and air passages. Gasoline tends to lose its potency after standing for long periods. Condensation may contaminate it with water. Drain the old gas and try starting with a fresh tankful.

## TROUBLESHOOTING INSTRUMENTS

Chapter One lists the instruments needed and detailed instruction on their use.

## STARTING THE ENGINE

When your engine refuses to start, frustration can cause you to forget basic starting principles and procedures. The following outline will guide you through basic starting procedures.

An ignition control system is installed on all Fourtrax 300 models that consists of a DC-CDI unit, ignition coil, neutral indicator light, neutral switch, reverse indicator light and reverse switch. When the ignition switch and the engine stop switch are ON, the ignition will produce a spark for starting only when the transmission is in neutral (the neutral switch is ON) and the engine is cranking.

Always allow the engine to sufficiently warm up before riding off. Do not rev or accelerate hard with a cold engine as this may cause premature engine wear.

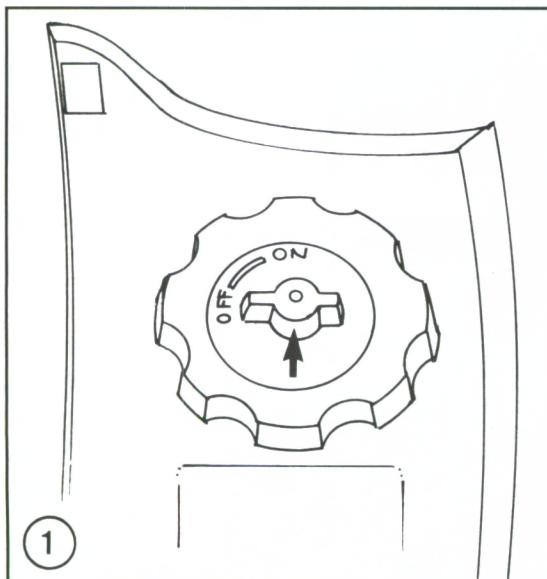
### Starting a Cold Engine

1. Shift the transmission into NEUTRAL.
2. Turn the fuel valve to ON.
3. Turn the fuel filler cap from the OFF (Figure 1) to the ON position.

#### NOTE

If the ambient temperature is below 5° F (-15° C) use the starting primer valve on the carburetor float bowl. Press in on the primer valve knob (Figure 2) once or twice before pressing the start button.

4. Move the choke lever (Figure 3) to the left.
5. Turn the ignition key to ON.
6. Turn the engine stop switch to the RUN position.



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